BETA-SSA AGAR (7336)

Intended Use

Beta-SSA Agar is used with blood for the selective isolation of group A streptococci.

Product Summary and Explanation

Group A streptococcal infections are the most common cause of bacterial pharyngitis in children 5 to 10 years old.[1] Beta-SSA Agar is a highly selective agar developed for the isolation of group A beta-hemolytic streptococci. The selective agents in the medium inhibit gram-negative bacteria and most Gram-positive bacteria, although some strains of group B beta-hemolytic streptococci may grow. Beta-SSA Agar is supplemented with 5% sheep blood to detect hemolytic patterns of streptococci.

Principles of the Procedure

The nitrogen, vitamin, and carbon sources are provided by Enzymatic Digest of Casein and Enzymatic Digest of Soybean Meal. Sodium Chloride maintains the osmotic balance of the medium. Selective Agents inhibit gram-negative bacteria and most gram-positive bacteria. Agar is the solidifying agent.

In general, blood agar bases are relatively free of reducing sugars, which have been reported to adversely influence the hemolytic reactions of β-hemolytic streptococci.[2] Supplementation with blood (5 - 10%) provides additional growth factors for fastidious microorganisms and aids in determining hemolytic reactions. Hemolytic patterns may vary with the source of animal blood and type of basal medium used.[1]

Formula / Liter

Enzymatic Digest of Casein ..... 15 g
Enzymatic Digest of Soybean Meal ..... 5 g
Sodium Chloride ..... 5 g
Selective Agents ..... 0.0462 g
Agar ..... 15 g
Final pH: 7.3 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 40 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Prepare 5 - 10% blood agar by aseptically adding the appropriate volume of sterile defibrinated blood to melted sterile agar medium, cooled to 45 - 50°C.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium without blood is beige and trace to slightly hazy. With 5% sheep blood the medium is red and opaque.

Expected Cultural Response: Cultural response on Beta-SSA Agar supplemented with 5% sheep blood at 35°C after 18 - 24 hours incubation.

Microorganism	Response	Reactions
Escherichia coli ATCC® 25922	inhibited	---
Staphylococcus aureus ATCC® 25923	inhibited	---
Streptococcus pneumoniae ATCC® 6305	inhibited	---
Streptococcus pyogenes ATCC® 19615	growth	beta hemolysis (clear zone w/ Bacitracin disk)

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1. Process each specimen as appropriate, and inoculate directly onto surface of the medium. Streak for isolation with inoculating loop, stab agar several times to deposit beta-hemolytic streptococci beneath the agar surface. Subsurface growth will display the most reliable hemolytic reactions owing to activity of both oxygen-stable and oxygen-labile streptolysins.[1]
2. Incubate plates aerobically, anaerobically, or under conditions of increased CO_2 (5 - 10%) in accordance with established laboratory procedures.

Results[3]

Examine medium for growth and hemolytic reactions after 18 - 24 and 48 hours incubation. Beta hemolysis (β) is the lysis of red blood cells, producing a clear zone surrounding the colony.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.
2. Atmosphere of incubation is known to influence hemolytic reactions of beta-hemolytic streptococci.[1] For optimal performance, incubate blood agar base media under increased CO_2 (5 - 10%) in accordance with established laboratory procedures.

Packaging

Beta-SSA Agar	**Code No.**	**7336A**	**500 g**
		7336B	**2 kg**
		7336C	**10 kg**

References

1. **Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (eds.).** Manual of clinical microbiology, 6th ed. American Society of Microbiology, Washington, D.C.
2. **Casman, E. P.** 1947. A noninfusion blood agar base for neisseriae, pneumococci and streptococci. Am. J. Clin. Pathol. **17**:281-289.
3. **Isenberg, H. D. (ed.).** 1992. Interpretation of aerobic bacterial growth on primary culture media, Clinical microbiology procedures handbook, vol. 1 p. 1.61-1.67. American Society for Microbiology, Washington, D.C.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (410)780-5120 or fax us at (410)780-5470.